FlexScan® EV2480

LCD MONITOR

The EIZO Group is aware that one of our key responsibilities is to conduct business taking the environment into consideration. We strive to contribute to the sustainable development of our society by being conscious of the impact our business has on the environment.

In product development, we endeavor to meet the legal requirement and standards as well as to enhance the environmentally sound quality of our products including compliance with the legal requirement and standards, industry trends and social conditions.

In addition, we conduct product environmental assessments in accordance with our own Environmental Compliance Standards to measure the environmental soundness of products.

The 23.8-Inch EV2480 is a frameless Full HD (1920 x 1080 pixel) monitor equipped with USB Type-C for improving productivity and comfort at the office or at home.
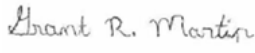
FlexScan EV2480
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According to ISO 14025

This declaration is an environmental product declaration (EPD) in accordance with ISO 14025. EPDs rely on Life Cycle Assessment (LCA) to provide information on a number of environmental impacts of products over their life cycle. Exclusions: EPDs do not indicate that any environmental or social performance benchmarks are met, and there may be impacts that they do not encompass. LCAs do not typically address the site-specific environmental impacts of raw material extraction, nor are they meant to assess human health toxicity. EPDs can complement but cannot replace tools and certifications that are designed to address these impacts and/or set performance thresholds – e.g. Type 1 certifications, health assessments and declarations, environmental impact assessments, etc. Accuracy of Results: EPDs regularly rely on estimations of impacts, and the level of accuracy in estimation of effect differs for any particular product line and reported impact. Comparability: EPDs are not comparative assertions and are either not comparable or have limited comparability when they cover different life cycle stages, are based on different product category rules or are missing relevant environmental impacts. EPDs from different programs may not be comparable.

PROGRAM OPERATOR	UL Environment
DECLARATION HOLDER	EIZO Corporation
DECLARATION NUMBER	4789774306.101.2
DECLARED PRODUCT	FlexScan EV2480 LCD Monitor
REFERENCE PCR	Common Guideline for Energy Using Products(2017-3) / EDP 004.MONITOR (2013/00/201309). Environmental Declaration of Products_Product Category Rules(PCR) for Monitor by Ministry of Environment, Korea
DATE OF ISSUE	January 1, 2021 (Data Updated November 8th, 2023)
PERIOD OF VALIDITY	5 Years
CONTENTS OF THE DECLARATION	Product definition and information about building physics
	Information about basic material and the material's origin
	Description of the product's manufacture
	Indication of product processing
	Information about the in-use conditions
	Life cycle assessment results
	Testing results and verifications

The PCR review was conducted by:	PCR Review Panel
This declaration was independently verified in accordance with ISO 14025 by Underwriters Laboratories ☐ INTERNAL ☒ EXTERNAL	*Grant R. Martin* Grant R. Martin, UL Environment
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:	*James A. Mellentine* James Mellentine, Ramboll

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Product information

Product description

The 23.8-Inch EV2480 is a frameless Full HD (1920 x 1080 pixel) monitor equipped with USB Type-C for improving productivity and comfort at the office or at home.

Application

This product is suited to general purposes like creating documents, viewing multimedia content.

Product Environmental Information

EV2480 was certified EPA ENERGY STAR Ver.8.0, TCO Certified Generation 9, EPEAT(IEEE1680.1-2018) , TUV/Ergonomie, TUV/Low blue light content, TUV/Flicker Free, RoHS, WEEE and China RoHS.

Company Environmental Activities

Although global environmental standards such as TCO Certified and EPEAT are not legal regulations, EIZO has actively participated and adapted from the beginning of the standard to improve the environmental performance of our products.

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Technical Data

The below table shows the decpription of product technical specification.

Table 1: Technical specification

Panel	Type	IPS
	Backlight	LED
	Size	23.8" / 60.5 cm
	Native Resolution	1920 x 1080 (16:9 aspect ratio)
	Viewable Image Size (H x V)	527 x 296.5 mm
	Pixel Pitch	0.275 x 0.275 mm
	Display Colors	16.77 million
	Viewing Angles (H / V, typical)	178° / 178°
	Brightness (typical)	250 cd/m2
	Contrast Ratio (typical)	1000:1
	Response Time (typical)	5 ms (gray-to-gray)
Video Signals	Input Terminals	USB Type-C (DisplayPort Alt Mode, HDCP 1.3), DisplayPort (HDCP 1.3), HDMI (HDCP 1.4)
	Digital Scanning Frequency (H / V)	USB Type-C: 31 - 68 kHz / 59 - 61 Hz
		DisplayPort: 31 - 68 kHz / 59 - 61 Hz
		HDMI: 31 - 68 kHz / 49 - 51 Hz, 59 - 61 Hz
USB	Upstream	USB 3.1 Gen 1: Type-C
	Downstream	USB 3.1 Gen 1: Type-A x 4
Audio	Speakers	1.0 W + 1.0 W
	Input Terminals	USB Type-C, DisplayPort, HDMI
	Output Terminals	Headphones (Stereo mini jack)
Power	Power Requirements	AC 100 - 240 V, 50 / 60 Hz
	Typical Power Consumption	11 W
	Maximum Power Consumption	142 W
	Power Save Mode	0.5 W or less

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Physical Specifications	Dimensions (Landscape, W x H x D)	537.8 x 332.4 - 523.6 x 230 mm
	Net Weight	7.4 kg
Environmental Requirements	Operating Temperature	5 - 35 °C
	Operating Humidity (R.H., non-condensing)	20 - 80 %

Material Content

The below tables show the weight composition by compnent or material in a product and package. Less than 5% of cumulative mass of the product/packagge are excluded.

Table 2: Components/Materials in a Product

Component/Material	Weight (%)	Notes
ASSY-STAND-UNIT	27.8%	Inclusion
UNIT-LCD	27.8%	Inclusion
ASSY-PCB-POWER	11.1%	Inclusion
MLD-REAR-COVER	6.8%	Inclusion
ASSY-BASE-UNIT	5.8%	Inclusion
MTL-MAIN-SHIELD	4.0%	Inclusion
MLD-MID-COVER	3.3%	Inclusion
CORD-AC	2.8%	Inclusion
MTL-MB-COVER	1.6%	Inclusion
MTL-MT-COVER	1.6%	Inclusion
ASSY-PCB-MAIN	1.5%	Inclusion
MTL-VESA-PLATE	1.3%	Inclusion
Cables	1.3%	Exclusion
Manuals	1.0%	Exclusion

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Component/Material	Weight (%)	Notes
Plastic Moldings	0.9%	Exclusion
Metal Materials	0.6%	Exclusion
Harnesses	0.4%	Exclusion
Others	0.3%	Exclusion
Speakers	0.1%	Exclusion
Sheets	0.1%	Exclusion
Printings	0.1%	Exclusion
Screws	0.0%	Exclusion
Gaskets	0.0%	Exclusion

Table 3: Components/Materials in a Package

Component/Material	Weight (%)	Notes
CARTON-24W-25	68.8%	Inclusion
CUSHION-24W-20	26.1%	Inclusion
BAG-PACKING-SET	2.3%	Inclusion
PAPER	2.1%	Exclusion
SHEET	0.7%	Exclusion

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Manufacturing Location

Table 4: Manufacturing Location

Factory	Address
EIZO Corporation	153 Shimokashiwano, Hakusan, Ishikawa 924-8566 Japan
EIZO MS Corporation (Unit board)	37-9-Re Jike, Hakui, Ishikawa 925-8566 Japan

Transportation

The below table show the transportation path from EIZO manufacturing locatin to their customer sites.

Table 5: Trasportation information from a factory to a customer site

Path	Geographical information		Volume (ton)	Distance (km)
	Departure	Arrival		
10t truck	Hakusan, Ishikawa	Tokyo	29.3	600
4t truck	Hakusan, Ishikawa	Tokyo	40.5	600
10t truck	Hakusan, Ishikawa	Osaka	5.2	450
4t truck	Hakusan, Ishikawa	Osaka	14.1	450
10t truck	Hakusan, Ishikawa	Nagoya	6.0	400
4t truck	Hakusan, Ishikawa	Nagoya	3.1	400
10t truck	Hakusan, Ishikawa	Fukuoka	13.0	900
4t truck	Hakusan, Ishikawa	Fukuoka	0.3	900

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Use Phase

In Use phase, the total power consumption during the lifetime was calculated according to EPD 004: Monitor [2013/00/201309], Product Category Rules (PCR) for Monitor as below.

Table 6: Usage Condition

Usage time (hours/day)			Lifetime (year)	Usage day (days/year)
On mode	Standby mode	Off mode		
9.6 (40%)	1.2 (5%)	13.2 (55%)	4	365

Power consumption (W)			Total Power Consumption (kWh)
On mode	Standby mode	Off mode	
11 W	0.5 W	0.5 W	164.7 kWh

Disposal Stage

The below table show the waste treatment by material according to the data from Japan Plastic Waste Management Instituten, Association for Electric Home Appliances, Paper Recycling Promotion Center.

Table 7: Disposal treatment

Material	Weight (%)	Recycle	Incineration	Landfill
Plastic	23.8%	86%	8%	6%
Iron	44.2%	86%	–	14%
Paper	13.8%	95%	5%	–
Glass	5.0%	–	–	100%
Aluminum	5.5%	86%	–	14%

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Copper	1.5%	86%	–	14%
Other material	6.3%	–	–	100%
Other metal	0.0%	–	–	100%

LCA Rules

Functional Unit

The functional unit is defined as one unit of 23.8-inch LCD monitor.

System Boundary

The system boundary includes all life cycle stages includes Collecting Raw Materials, Manufacturing, Distribution, Use and Disposal. This is a cradle-to-grave study and this LCA study is not comparative assertion.

Table 8: System Boundary

Stage Prior to Manufacturing	Collecting Raw Materials	A1	X
Stage of Manufacturing	Manufacturing	A2	X
	Distribution	A3	X
Stage of Use	Use	B	X
Stage of Scrapping	Disposal	C	X

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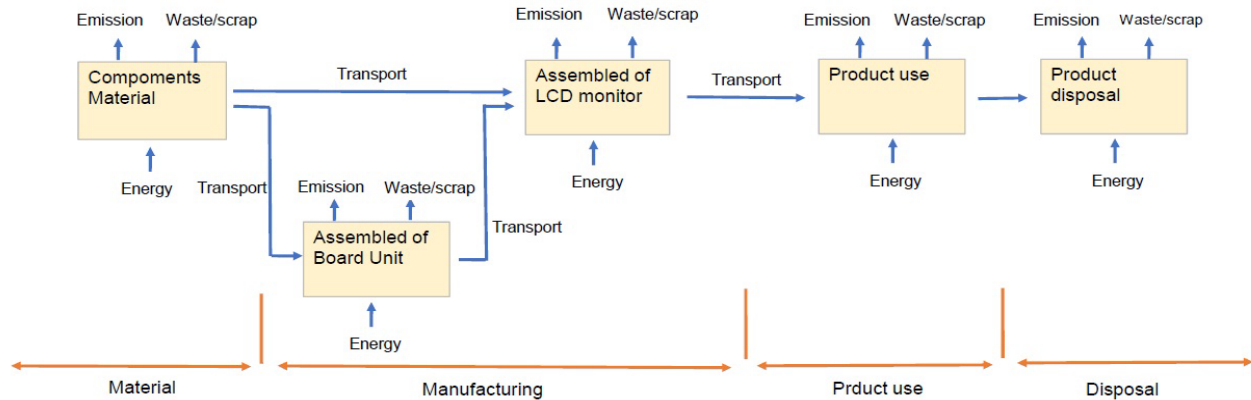
Cut-off Rules

Material Inventory survey was conducted on 95 wt. % of material in each Product / Package.Disposal stage survey was conducted on 95 wt. % of material in each Product / Package.

LCA Data

For Life Cycle Assessment, SimaPro release 9 software system has been used. Ecoinvent 3 datasets have been taken from SimaPro release 9 software database.

EIZO collects

- Material data from the product specification

- Usage codition data from the product specification

- Transportation data from carrier's input

- Energy data from the utility invoice

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Data Quality

All foreground data were collected at Hakusan and Hakui Plant Between April 2022 and March 2023 (One year average data).

Background data were used from ECOINVENT 3 database (The data version is 2022).

Allocation

The electric power used in the factory for manufacturing an EV2480 was calculated by allocating EV2480 weight from the total weight of the monitor produced in one year (monitor mass x number of production) of this factory.

The electric power used in the PCB board factory for manufacturing an EV2480 PCB board was allocated from the production ratio of small, medium, and large monitors for one year and its representative mass of the PCB board.

Assumption and Limitation

Assumption

The on-mode power consumption when using this monitor was used the power consumption value of EIZO's Typical Power Consumption specifications.

For transportation, EIZO picked up four major cities, Tokyo, Osaka, Nagoya and Fukuoka.

Glass and other materials/metals were assumed to be 100% landfilled.

Limitation

The study results are limited to a specific use scenario and real-world use of the monitor which may significantly change the result. Materials are represented by industry average data, not primary supplier data. To the extent that material/components suppliers may not be average, the results might significantly change.

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Life Cycle Assessment Results

The LCA was calculated by using CML and developed by the Institute of Environmental Sciences Leiden University, the Netherlands. https://www.universiteitleiden.nl/en/science/environmental-sciences/tools-and-data#CML_IA

LCIA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks.

Table 9: Life Cycle Assessment Results

Environment Impact			
Impact Category	Units	A1-C	Model
Global warming (GWP)	kg-CO_2eq	3.12E+02	IPCC
Ozone depletion (ODP)	kg-CFC-11eq	1.61E-05	WMO
Eutrophication (EP)	kgPO_4^{3}-eq	1.03E+00	Heijungs et al.
Acidification potential (AP)	kg-SO_2eq	2.36E+00	Hauschild and Wenzel
Photo Chemical Ozone Creation (POCP)	kg-C_2H_4eq	1.10E-01	Jenkin and Hayman
Abiotic Depletion Potential (ADP)	Kg-Sbeq	2.35E+00	Guinee et al.

Impact Category	Units	Raw Material A-1	Manufacturing A-2	Transportation A-3	Use B	Disposal C
GWP	kg-CO_2eq	2.05E+02	2.05E+00	2.07E+00	1.02E+02	1.00E+00
ODP	kg-CFC-11eq	1.37E-05	3.57E-08	3.06E-07	1.98E-06	3.47E-08
EP	kgPO_4^{3}eq	9.25E-01	1.91E-03	1.18E-03	1.01E-01	3.51E-04
AP	kg-SO_2eq	1.87E+00	9.11E-03	5.36E-03	4.71E-01	8.03E-04
POCP	kg-C_2H_4eq	9.01E-02	3.77E-04	2.65E-04	1.95E-02	3.56E-05
ADP	Kg-Sbeq	1.59E+00	1.48E-02	1.47E-02	7.35E-01	1.71E-03

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Interpretation

Completeness

Since we have made a 5% cut-off, the raw material should be an additional 5%. In the GWP impact index, Row material accounts for 65.6% of total emissions. Therefore, the total impact will increase by 3.3%.

The materials within 5% are small parts, sheets and labels made of general plastics, and copper harnesses, paper prints, metal, screws, etc.

The 5% materials do not include anything that has a major impact on the environment.

Sensitivity

When the brightness of On-mode, which may vary as data, is doubled, it will increase by 4.3W in actual measurement.

When On-mode increases by 4.3W, Total Power Consumption increases from 164.7kWh to 225.0kWh. This corresponds to an increase of 37.3kg in CO2 emissions. In the GWP impact, Total Power Consumption (use phase) accounts for 32.7% of the total, so the total GWP impact increases by 12.0%.

Consistency

The impact index of the LCD panel accounts for 69.1% of the raw material, and 45.4% of the total life cycle impact index. If the impact index of the LCD panel increases by 10% due to errors, the total impact will increase by 4.5%. This corresponds to an increase of 14.1 kg in CO2 emissions.

Representativeness

The materials and processes of this product are very common. So, most of selected data represents this model well. However, there are several kinds of cables/connectors in this product and we used only the below three data. These cables/connectors consist of 3.5% total product weight. This might have some small variances.

- Cable, three-conductor cable
- Electric connector, wire clamp
- Electric connector, peripheral type buss

There is a stand-free version as another form of EV2480. In the case of the version without stand, the impact index for the no stand is reduced.

From the GWP impact, CO2 emissions from the stand are 6.3% of the row material, which is 13.0kg. The total impact without a stand is only decrease of 4.2%, and it can be considered that the standard product with stand can be regarded as representative data.

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References

ISO 14025/DIN EN /ISO 14025:201110: Environmental labels and declarations - Type III environmental declarations - Principles and procedures

ISO 14040: 2006 - Environmental management – Life cycle assessment – Principles and framework

ISO 14044:2006 - Environmental management – Life cycle assessment – Requirements and guidelines

EPD 004: Monitor [2013/00/201309], Product Category Rules (PCR) for Monitor

SimaPro 9.0 / Ecoinvent 3:

CML 2001 (all impact categories) V2.05 / the Netherlands, 1997

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